

REMARKS

Claims 20-41 are in the application. Entrance of the present amendment under Rule 116, and reconsideration, are respectfully requested.

1. Rejections Under 35 U.S.C. §112, Second Paragraph

Claims 20-22 are rejected under 35 U.S.C. §112, Second Paragraph, for indefiniteness in the language "or equivalently" appearing twice in claim 20.

The language is deleted by amendment to claim 20.

The terms (1a) through (1c) of claim 20 are, although connected by the word "or", not true alternatives, but merely alternative means of describing and expressing the information that represents the background of the scene. A practitioner of the digital imaging arts will recognize that all the terms (1a) though (1c) are not true alternatives, but merely different words and phrases all of which are descriptive of the same basic information, to wit: information on the background of the scene.

2. Rejection Under 35 U.S.C. §103

Claims 20-41 are rejected under 35 U.S.C. §103(a) as being anticipated by the reference art patent no. 6,727,925 [SIC] to Smith, et al. [SIC] in view of the prior art paper of Technicon Inc.[hereinafter "Technicon"].

The U.S. patent no. 6,727,925 referenced at section 5, line 2, of the Office Action is to Bourdelais and not to Smith, et al.; which patent was the basis of a previous rejection. It is presumed that this is a typographical error, and that the Examiner means U.S. patent no, 6,052,669 to Smith, et al. [hereinafter "Smith, et al."], newly made of reference.

2.1 Discussion of The Cited Art

Although Applicant full well realizes he must distinguish his invention as claimed -- and does so in section 2.3 hereinafter -- Applicant begs the indulgence of the Examiner for the following four paragraphs of this section 2.1 reviewing the showings of (1) Smith, et al., and of (2) Technicon.

The patent to Smith, assigned to a major manufacturer of office equipments, concerns the graphically-assisted selection of office furniture components, and the validation of the correct interoperability of the components so selected. Graphics renderings are minimal; mere "stick figures" (although 3D) are generated and presented.

The Technicon and SolidWorks references appear to be to what are commonly referred to as a Web3D system. In this system small models are downloaded to the client and rendered in real-time on the client.

These systems are very, very different from the method and system described and claimed by Applicant, where photorealistic 3D rendering is done on a server from scene and object inputs made from a client computer.

The Examiner is credited, however, in locating having located a reference in Smith that goes beyond the previously cited system and patent of Bordelais that relied entirely on 2D images, and that had nothing to do with 3D models.

2.2 Discussion of The Relation of the Present Application to the Predecessor Application Now issued as a U.S. Patent

Although Applicant again states that he full well realizes that he must distinguish his invention as claimed -- and does so in section 2.3 hereinafter -- since the present Examiner has

cited new art (1) which may or may not be found relevant to the (now realized) issuance of a patent on the predecessor application, and +(2) which is in any case now cited by the Examiner as relevant to passage to issuance of the claims of the present application, Applicant solicits the indulgence of the Examiner for another four paragraphs explaining of the purpose(s), and content, of the present, Continuation-in-Part patent application. In this short explanation Applicant begins to contrast his invention with the showings of Smith, and of Technicon.

The present application is directed to extending the concepts taught in the predecessor application. Two key concepts are newly taught and claimed.

The first concept is that the scene data need not be communicated from the client to the server in 2D (plan view) form, and translated to 3D using object based-rules (chairs sit on the floor). Instead, small (light i.e. low polygon count) "proxy" or "stand-in" models and textures can be placed in a 3D scene on the client and rendered in real time for the purpose of specifying the scene, and previewing the final rendering. Then this information is transmitted to the server, where the big high-resolution models and textures are substituted, and where a high-resolution 2D or 3D image is rendered entirely from 3D elements residing on the server, with the images is returned to the client for viewing.

In contrast, both the reference art of (1) Smith and (2) the apparent Web3D application as is the subject of the Technicon reference, serve to render a final image on the **client** for display to the user -- not for the purpose of specifying a scene to a ray-tracing rendering system on a **remote server!** Web3D

systems download small models from the server for rendering on the client. And, as will be argued, Smith makes no definitive statement (including at column 5, lines 29-67) as to exactly where any image should be rendered.

Conversely, Applicant teaches that the small models may be resident on the **client** - and not only the server -- at the start of the session. Applicant system uses proxy or stand-in models **on the client**. Moreover, Applicant's system renders any stand-ins in real time on the client for the purpose of previewing the final rendering, and of specifying the scene to the server.

2.3 Distinction of Applicant's Invention as Claimed over the Reference art of Smith combined with Technicon

In rejecting Applicant's claim 1 the Examiner finds at page 4, paragraph 2, et seq., that Smith shows at column 5, lines 29-35 each of Applicant's claimed "receiving at another, second, computer...; deriving in the second computer....; and utilizing in the second computer the background scene information... to generate... a perspective view image of the selected object...."

In actual fact, all that Smith states at column 5, line 29, et seq., is that "in other embodiments the [single] computer system 100 is connectable to a network computer so that some or all of its functions may be offloaded to other computers on the network".

This mere suggestion fails to teach or suggest the **specific** partitionment of functionality that is claimed by Applicant.

Neither does the system of Smith "utilize[e]... in... [any] computer the (1)-(2) background scene information and the identified high-quality object and its parameters and any (4) derived high-quality 3D background scene model to generate and

render in consideration of (5) a camera position and orientation, (6) a perspective view image of the selected object in the 3D scene". (claim 20) Not only is there no camera position nor orientation, but such limited image rendering as is done in Smith - which, it must be remembered, is directed to supporting component ordering and configuration control - is done by interaction with the user as described at column 9, line 56, et seq. {Applicant thought to potentially add the word "automatically" before "generate and render" in the previously quoted language of his claim 20, but believes that the distinction of the function claimed over Smith is clear enough.)

Moreover, Applicant's claimed "generating and rendering" (transpiring in a second, powerful, network-connected computer) is to the end "wherein the object, having an associated geometry, is rendered with specified parameters in proper (1) scale, (2) position, and (3) rotation within the perspective view image". (claim 20) This supports generation of a "photorealistic image" -- a copy of an example of which photorealistic image generated by Applicant's system was supplied the Examiner of the predecessor application, and which may be retrieved and inspected if desired by the Examiner of the present C-I-P application.

Applicant questions by his reference to, among other figures and text, Figures 11 and 14 of Smith whether objects - here (1) tables and (2) chairs - that **are** likely corrected **positioned** in Smith are also - even with involvement of a user operator - susceptible of being rendered with exact appropriate "**proper**" (1) "scale" and (3) "rotation". Instead (1) it looks like an object - a table or a chair - in Smith in **nearly proper** rotation is simply selected so as to be placed in the scene, and, further, (2) since the scene (see, for example, Figure 8) is fairly

unitary and without any great depth of field, the selected object may **not** have to be, and may not be, "scaled" at all. In other words, Smith renders an image that is "good enough" to select and configure office furniture, but is a far pace from the photorealistic images that Applicant claims to generate.

In any case, and as has already been stated, any object image generating and rendering in Smith, or in the reference of Technicon, is **not** to a "camera position and orientation", as is absolutely necessary if rendering is to be "with the same proper perspective that a conventional photo of the scene would exhibit... if captured by a camera". (claim 20).

In summary, there are images and there are images. Photorealistic image rendering (images having quality beyond those of Smith, or the reference art of Technicon) is known from a time before Applicant's date of filing. However, this (photorealistic) image rendering was normally done in supercomputers which **locally** received complete parameterization of the (3D) image space and the (generally 3D) objects within the space. Applicant's invention is (1) to generate these photorealistic images remotely on a network and **within a generally more powerful, even supercomputer, computer resource** of a server (2) in which, and by which, and at which server (a) selection of the image components (the scene, and the room, and the furnishings) and (b) parameterization of the desired view perspective (the camera position, and angle), has been (3) **received from a remote client computer**. Then, further, (4) the photorealistic image so generated is sent upon the network to the client computer, where it is displayed.

This claimed partitionment of function - which was within the issued patent and which is still within the claims of the

present application -- is neither taught nor suggested by the reference art of Smith in combination with the reference art of Technicon nor any other of the art of reference.

3. Summary

The present amendment and remarks have overcome and discussed each of the bases for the rejections presented in the Office Action. No new subject matter has been introduced by the present amendment.

In consideration of the preceding amendment and accompanying remarks, the present amendment is deemed worthy of entrance, and the present application is deemed in condition for allowance. The timely action of the Examiner to that end is earnestly solicited.

Applicant's undersigned attorney is at the Examiner's disposal should the Examiner wish to discuss any matter which might expedite prosecution of this case.

Sincerely yours,

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CERTIFICATE OF MAILING

I hereby certify that this AMENDMENT and the documents referred to as attached therein are being deposited with the United States Postal Service as first class mail postage prepaid addressed to: Box AFTER FINAL, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date written below.

August 28, 2005 William C. Fuess

Date Typed Name of Person Signature of Person Mailing
Mailing Correspondence Correspondence

William C. Fuess